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ABSTRACT

Total Quality (TQ), is a customer-oriented philosophy of management that utilizes total employee involvement in the relentless, daily search for improvement of product and service quality, through the use of statistical methods, employee teams, and performance management. In the TQ framework, "internal" customers are individuals within the institution, such as an instructor from upper division courses who receives the "products" (students) of a lower division instructor, while "external" customers include students, organizations which hire students, and organizations which send employees to attend classes at the college. TQ utilizes a systems approach comprised of suppliers (secondary schools), inputs (entering students), value added (the educational experience), output (productive citizenry), and customers (satisfied graduates). Employee and student behavior is seen as part of a system, with emphasis placed on continuous improvement of inputs to the system. TQ requires continuous inspection and improvement of processes, and reduction in variation in the generic inputs of processes. Using statistical concepts, leaders must analyze variation and reduce variation in inputs of processes. For example, to reduce variation in materials (as an "input"), an institution can purchase from first rate suppliers on a partnership long-term basis. Finally, TQ redefines a leader as a resource person, facilitator, or team leader, and views teachers as coaches or helpers. Students learn to be intrinsically motivated to enhance their natural curiosity, self-esteem, and personal dignity. (PAA)

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INTRODUCTION

Perhaps no other topic dominates today's professional journals for educators more than the subject of Total Quality. Some articles refer to Total Quality Management (TQM), Total Quality Leadership, Team-based Management, Managing for Quality and the list goes on. Is this Total Quality process for real? Or will it pass over time to be a fad, a quick fix to solve problems, a subject to know how to talk about in the "right" situations, but not implement because of resistance to change?

This paper will provide an understanding and some examples of applying Total Quality principles to community, junior, and technical colleges. The emphasis will be on the positive influence that Total Quality will have as colleges change their ways to anticipate the future. The emphasis will be that Total Quality is not a fad or quick fix, but a necessity for a college to implement as it provides services to its community.

So what is Total Quality? One of the best definitions is as follows:

Total Quality is a customer-oriented philosophy of management that utilizes total employee involvement in the relentless, daily search for improvement of quality of products and services through the use of statistical methods, employee teams and performance management.

Why Total Quality? Joel Barker describes the requirements for successful organizations to survive in the future to include:

* Anticipation
* Innovation
* Excellence

Colleges must predict their customers' needs. They must offer innovative educational services to their customers. These services must be produced in an excellent manner. Total Quality serves as a catalyst to help the college achieve excellence. How do we implement Total Quality in colleges? The basic thrust guiding the college's Total Quality efforts should be the teachings and philosophy of Dr. W. Edwards Deming. The theory of management of Dr. Deming as advocated in his 14 points apply to any kind of organization. The 14 points are fundamental to functioning in a new economic age as changes occur in all aspects of the educational enterprise. So Total Quality is a climate of change built around people. Total Quality is a transformation—a new beginning as colleges face the future. Let's expand the Total Quality concept.

CUSTOMER FOCUS

C—customers
A—are
R—really
E—everything

The concept of customers has a new meaning in college activities. Caring for customers is basic for Total Quality to be implemented. The external customers are:

* Organizations which hire the college's students
* Students who attend curriculum and Continuing Education Classes
* Organizations which send employees to continuing education and lifelong learning courses.

Most people recognize that the word "customer" denotes giving customers service or products in a caring, efficient, understanding quality manner. However, Total Quality expands the meaning of customers to include internal customers. Internal customers within the college are those who use or receive what someone else does for them. For example, the internal customer of the instructor teaching an introductory course is the instructor who teaches the advanced course. The next person in line who uses what you add value to is your internal customer. The internal customer of the college print shop is the Continuing Education coordinator who wants a training brochure printed. The list of internal customer/suppliers continues.

The objective is to "delight" your customers by meeting their needs and expectations. Delighted internal customers create internal excellence which results in quality service for external customers. The concept of delighting your customers rather than just satisfying them originated with Dr. Brian Joiner, who expands on the concept in his Total Quality seminars.

How does a college delight its customers? According to William Scherkenbach, the lack of a negative does not mean there is a strong positive. So to meet and exceed customer

expectations, continuous improvement of customer services must exist to have customers talk and brag about services. The college should try to outguess customers as to their future needs. This idea strikes at the core of Total Quality where cross-functional teams work to improve existing processes and systems within the college. The idea is listening to the "voice of the customer" to deliver those services as wanted, needed, and expected from the customer—both internal and external.

SYSTEM APPROACH

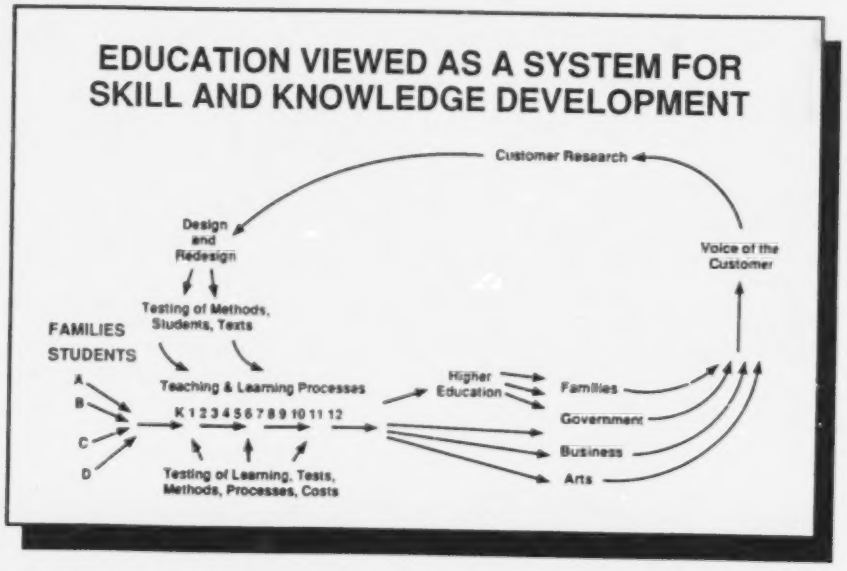
College customers are served through a system made up of many processes. What is a system? A system is basically composed of the following:

Suppliers → inputs → value added → output → customer

We can look at education as a system from a holistic viewpoint as follows:

tem, how a department within a college is viewed as a sub-system, and how an individual's job within the department can be viewed as a sub-system. The systemic approach asks the basic question: From whom do you receive what you do or use, what value do you add to it, and to whom do you supply as your customer? The communication in a system is basically east-west or as the system flows rather than north-south (a traditional organizational hierarchy). And the major focus is on pleasing the customer.

Total Quality is concerned with continuous improvement of the system, which is a leader's responsibility. One of the major points of systemic thinking is to recognize that the performance of college employees and students is not dependent solely on what the employee or student does, but their performance is dependent on the system in which they perform. Systemic thinking means assigning results to the system, not just to the person involved. Systemic thinking is causing the questioning of such traditional practices as grading students as if they are totally responsible for their performance as compared to the effect of variation that occurs in the system in which they learn. Another example is questioning the traditional employee performance appraisal as if the employee is totally responsible for his/her performance rather than the variation in inputs of the system in which the employee works. The job of top management is to work <u>on</u> improving the system with the help of employees who work <u>in</u> the system.



From this flow diagram, one can see that the supplier to the college is the secondary school system. The input is theoretically a student without knowledge who, when value is added by college learning processes and experiences, results in a student with knowledge who cherishes the joy of learning and who becomes a contributing member of society, the ultimate customer.

This system flow diagram concept can be utilized to show how an individual college is viewed as a sub-system with the help of employees who work <u>in</u> the system.

PROCESS DRIVEN

Within the systems approach, Total Quality is a realization that any system is made up of various processes and sub-processes. A process is a blending of generic inputs such as people, materials, equipment, machines, methods, procedures, and the environment in which these take place. These inputs have value added to them and an output (product or service) is produced for a customer. Examples of processes in colleges are:

• Registration • teaching • billing • collecting • purchasing • recruiting • accounting • counseling • maintenance • campus security • parking

There are also many sub-processes within each of these processes that have the same process flow, i.e. inputs, value added, and output. Inputs for certain processes will be specific rather than generic. For example, if we examine the teaching process, we find that the inputs could include: teachers, students, curriculum design, textbooks, teaching methods, and physical facilities. All of these inputs blend to add value and produce an output—a student who has experienced learning and wants to acquire knowledge. When we view the college from a holistic viewpoint, we see that the output of the college is the combination of interdependent processes. These processes and sub-processes are either dominated by one or more of the inputs or are dominated by an interaction between the inputs. Counseling is dominated by the peopie input; campus maintenance could be dominated by materials, equipment, or machine inputs.

Total Quality focuses on continuous improvement of inputs that produce the output in the process. Traditional organizations are results or output driven. Examples include how many students; how many contact hours generated; how many mistakes made in billing, registration, and so forth. Emphasis is heavily upon the output of a given process and upon identifying who is responsible for failure in the process.

Total Quality is concerned with a paradigm shift stressing the notion that if you continuously improve the inputs of a process, you will get good output

(results). This statement is a break from the traditional, because so many goals and objectives are output or numbers driven for measuring success rather than process driven where success is measured by customer satisfaction. Roger Slater expresses the emphasis on process improvement in Japan and the USA in his book Integrated Process Management.

Slater shows that the Japanese tend to direct more effort on the design and development of processes and use problem solving as a mop-up function. Conversely, in America, the index of effort has been more on problem solving after the process is developed instead of placing major effort on perfecting the inputs of the process so problem solving becomes less important.

HOW DO COLLEGES IMPROVE PROCESSES?

Process improvement can occur in colleges where teams of internal customers and suppliers apply team process improvement tools to work on the inputs of the process so as to improve the output. One way for improving processes is to utilize the PDSA cycle of Plan, Do, Study, Act, commonly referred to as the Deming cycle. The traditional way to improve processes is to "inspect" quality into the process. Inspection in a college process can take the form of multiple signatures of approval for expense vouchers, travel approval, work orders, or purchase orders. There can be layer upon layer of managers who inspect reports that go up and down the chain of command.

The alternative to the detection or inspection method to improve processes is the prevention method. The prevention method to improve processes is concerned with preventing mistakes, errors, and poor quality by using statistical concepts and methods to improve the inputs of the process.

VARIATION

Statistical thinking involves an understanding of variation. Reducing variation in the inputs of processes is the key to getting better results or outputs from a process. Let's examine some ways to reduce variation in the generic inputs of a process.

PROCESS INPUTS	METHODS TO REDUCE VARIATION
People	Better training Better hiring practices
Materials	Buy from first rate suppliers on a partnership long term basis rather than "low bid" mentality
Equipment	Improve maintenance Buy on value not only price
Methods	Follow PDSA cycle
Environment	Adopt the new philosophy of Total Quality to change the cultural environment to a team based empowered total involvement workforce.

To understand variation one must follow the systems approach. In the systems model, variation is separated into two causes—common cause and special cause. A process with only common causes is said to be statistically stable, predictable or in statistical control. What does this mean? Being in statistical control does not necessarily mean that the results of the process are acceptable. It means that improving the process is the responsibility of management who may appoint a problem solving team to improve the inputs that produced the outputs.

For example, the registration process of a college might show an up and down record for student enrollment over several quarters or semesters. To determine if the variation in enrollment is due to common cause, data would be collected and, using statistical formulas, upper and lower control limits would be determined to see what the present enrollment process is producing. The control limits are not based on what we would like the enrollment process to do. If all the data points for college enrollment are within the control limits, all variation in college enrollment is common or random variation. Asking college officials to explain reasons for why enrollment varies in a stable system is called tampering. Variation will get worse when tampering occurs to a stable process in "statistical control."

If any data points are outside the control limits the process is said to be unstable, out-of control, and not in statistical control. Immediate action is required to look at the "why" for this special cause of variation. In college enrollment, there could be positive or negative special cause variation. For example if an enrollment data point broke through the upper control limit, positive special cause variation would occur and the college would want to know the "why" for this immediately. In this example, perhaps three new industries moved into the community and their employees were enrolled in college curriculum courses. When special cause occurs and the process is "out-of-statistical control", new upper and lower control limits can be computed to monitor the future enrollment process.

Using data and understanding variation from the systems model requires one to know causes of variation, and respond according to common or special cause variation. The objective is to use data in processes to improve the process which leads to continuous improvement, not use data to reward or punish people. Variation is the enemy. It should be reduced in all inputs of all processes to continuously improve the various processes of the college.

LEADERSHIP

For a college to be customer focused and function as a system, driven by continuous improvement of processes by reducing variation in those processes, leadership must be redefined in a Total Quality organization.

In a Total Quality organization, the role of the leader is different from that of the traditional manager. The responsibility is enhanced; the names have been changed. For example, words such as resource person, facilitator, team leader, all have the meaning of being helpful, coaching, counseling and leading. Doesn't this make sense for what a teacher should be doing anyway? Many people in education are bound by the old paradigm of teaching which is basically—Direct, Reward, or Punish. Think about it. Isn't that what most of us grew up to think was the job of a teacher? Total Quality redefines the teacher as a leader, coach, and helper—a person who listens and stimulates intrinsic motivation on the part of a learner to experience the joy of learning.

Educators who think in traditional terms must break from the old ways of saying, "I have the answers and it's up to the student to find them." The new

approach should be to make the student a self-directed learner.

The new style of educational leadership applies to the administrative side of the college also. The Total Quality leader removes obstacles to the joy of work by not exercising micro-management or over-control. As Deming states, "The job of the leader is to improve the system in which work takes place." This includes total involvement of all staff, continuous improvement of processes and knowing by statistical concepts who, if anyone, is outside the system and in need of special help. While the job of a leader is greatly enhanced in a Total Quality organization, many leaders feel threatened by the powerful three letters of EGO. In actuality, the leader's job is not one of giving up power that feeds the ego, but the leader is to help his or her associates reach new heights of success under the leader's guidance and help.

CONCLUSION

If college leaders are to understand and apply Total Quality principles as a value system in their future pursuits of leading the college, the following basic principles must be adopted.

1. The college must focus on continuous improvement of services for the benefit of its external customers. The atmosphere at the college must create internal customer excellence as a basis for serving external customers.
2. The college must be viewed as a system of education and knowledge made up of interdependent processes and sub-processes.
3. The college must be process driven to continually improve services utilizing teams and total staff involvement. Results will be improved if processes are improved.
4. College leadership must understand variation that occurs in all processes. Using statistical concepts, variation must be analyzed as to causes and attempts should be made to reduce forever the variation that occurs in all inputs of processes.
5. Leadership must be emphasized instead of just management. Leadership is helping people do a better job, creating joy and pride in workmanship, joy in learning and encouraging cooperation among the whole team of staff members. Teachers must help students learn to be intrinsically motivated to enhance their natural curiosity, self-esteem, and personal dignity.

The transformation of education to Total Quality will require college management/leadership to be totally committed and to actively participate in the transformation.

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